UCRL-ID-148557

"Whither Deterrence?" A Brief Synopsis

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May 2002

U.S. Department of Energy

Lawrence Livermore National Laboratory

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This work was performed under the auspices of the U. S. Department of Energy by the University of California, Lawrence Livermore National Laboratory under Contract No. W-7405-Eng-48.

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The "Whither Deterrence?" study began in April of 2001 to address the question of what deterrence should look like in the future. This report presents a brief synopsis of the study—a longer, more comprehensive report will follow.

Introduction

To most audiences, deterrence has been interconnected with nuclear weapons whose purpose had been to deter a Soviet attack. But, the Soviet Union has been gone for almost a decade. President George W. Bush has stated that Russia is not an enemy of the United States and the numbers of nuclear weapons can be dramatically reduced[1].

It is important to note that deterrence has always transcended nuclear weapons. The United States' first line of deterrence has been its formidable conventional warfare capability, designed to prevent conflict and win wars if necessary. The role of nuclear weapons has been to deter the use of nuclear weapons and other weapons of mass destruction against U.S. interests during the conduct of conventional warfare and to ensure our ability to inflict massive destruction on any who would use nuclear weapons, or other weapons of mass destruction, against us. With regard to the Soviet Union, the threat of the use of nuclear weapons was a critical component of our deterrent to prevent massive Soviet conventional attack against our allies in Europe.

However, the events of September 11, 2001 make clear that we have not convinced all who seek to harm us that we will be able to respond in a manner to make them wish they had not even tried. The September 11 attacks, as well as other past conflicts, do not mean that deterrence has failed--it remains effective against the threats for which it was designed. We have known there are other threats for which we did not have a credible deterrent. The challenge is to sustain deterrence against the classic threats as they evolve in technical sophistication while remaining alert to the need to evaluate continuously our ability to deter previously unforeseen challenges. How then should we be looking at deterrence as we consider fifteen or so years in the future, say to about 2015? What will

[1] Russia has recently concluded an agreement with the United States for significant strategic arms reductions beyond those of START II and has also entered into an agreement to participate in some NATO activities.

be the role of nuclear weapons and other instruments of mass destruction in the future? What should the United States be doing to prepare for the future?

In this study, we present four futures (See Fig. 1) as a tool for planners who must think ahead fifteen years or more, rather than a prediction of the future. None of the four futures will emerge in just the way we have described. Fifteen years from now, some mix of these futures is more likely, or perhaps we will see a trend towards one of the futures, but with the possibility that any of the other three could appear, perhaps quite swiftly. Any future will undoubtedly contain its own kind of unpleasant surprises and, in contrast to the Cold War; the possession of enormous nuclear-response and conventional-response capability may not be sufficient to deter these from happening. However, there are other tools that the United States must include as part of its strategy and security policy in addition to deterrence, specifically dissuasion, defense, destruction, and assurance (See Fig. 2). Rather than rely on the Cold-War concept of deterrence, future security policy should be built upon the appropriate mix of these elements as a way to steer us toward a more favorable future, while ensuring that we are prepared for the kinds of surprises associated with far less favorable futures.

In this study, we have defined three unfavorable futures to be avoided, and one future that represents, we believe, a more desirable global situation than the first three, but still not entirely benign. Our security policy should be defined to avoid or prevent the first three, which we have entitled *Nuclear Giants*, *Global Terror*, and *Regional Nuclear Tension and Use*, and steer us toward a more favorable future, *Dynamic Cooperation*. (See Fig. 1) We have examined the implications for both policy and military capability that are posed by these different futures. The result often raises more questions than we are able to answer without additional study—however, our primary purpose was to clarify the issues, to identify what we believe we know, what we don't know, and where more study and effort are needed. Nevertheless, in preparing for unfavorable futures, we must also identify and plan the future we want. This study emphasizes that a desirable future in 2015 would be characterized by peaceful resolution of conflict, growing worldwide economic prosperity, an effective non-proliferation regime, the ability of the United States to control its own destiny without conflict, and expansion of political and economic freedom. Security policies, even in the face of unpleasant futures, should be crafted so as enhance, rather than diminish, these desired goals.

Four Possible Futures

Nuclear Giants represents an extrapolation from the present, characterized by massive nuclear arsenals and delivery systems. Russia and China will be our dominant protagonists with an expectation that they could interact either as allies or adversaries. In this future, Russia will seek to regain global power, while China seeks to attain it, with India at the threshold and moving up. Nuclear stockpiles will be of the order of 1000s of warheads, with sophisticated delivery systems. Russia and China will possess chemical and biological weapons. Theater missile defense will be relatively robust and the United States will have a modest national missile defense. Russia and China will sell advanced conventional weapons, ballistic and cruise missiles, and WMD technologies. The United

States, the European Union, and Japan will be the dominant economic powers, but China's economy will grow and will eventually become a dominant economic force. Russia's economy will continue to lag those of the major powers.

Global Terror reflects today's headlines, but has persisted until 2015 and has expanded to be a truly global problem. The main source will be militant Islamic fundamentalists, the only terrorist network with global reach. They will be prepared and capable of using any weapons of mass destruction and will have been successful in overthrowing moderate Islamic governments. The economies of the United States, Europe, and East Asia will have been severely damaged. The U.S. homeland will have been attacked regularly and will be perennially vulnerable—U.S. global influence is waning and alliances eroding. To deal with this threat, the great powers may pursue unilateral actions or may join together in a grand anti-terror coalition. There is the possibility of a nuclear response by Israel or other serious reactions by the United States or other states.

The third scenario, *Regional Nuclear Tension and Use*, posits a set of possible futures, all of which involve the use or potential use of nuclear weapons in a regional context, but which have the potential for global impact. All may be triggered by regional cultural, religious, and political tensions and are exacerbated by the possession of nuclear weapons and a multiplicity of delivery vehicles. India and Pakistan will be obvious candidates, but there will be others, such as Iran and Iraq, and perhaps Egypt and Syria acquiring nuclear weapons. Furthermore, U.S. pursuit of terrorists in unstable regions could stimulate regional conflict. The fact of a nuclear-armed Israel will certainly continue into the future and its nuclear capability will stimulate its neighbors to develop weapons of mass destruction and encourage asymmetric ways to use them. Another scenario has Korea uniting, but possessing nuclear weapons, causing Japan to acquire them with modern delivery systems. Nuclear exchange under these scenarios will become more likely as is the use of other weapons of mass destruction.

We have also examined a fourth scenario, *Dynamic Cooperation*, which represents another possible future, but one that is more favorable than those posited above. In this future, democratic political systems and market economies will be on the ascendancy. Although there may be limited low-level conflict throughout the world, there are no global threats and the great powers have established productive relations. The continued globalization of markets and technology will enhance economic productivity and growth and the threat of the proliferation of WMD will have declined. This future is accompanied by an increase in the authority over and governance of international crime and commerce by international institutions. Nuclear weapons are present, but stockpiles will have been reduced and proliferation is largely curtailed. Surprise has not been eliminated.

Policy Issues

For each of the futures outlined above, the United States will have to formulate and execute policies, either to attempt to prevent the consequences of a particular negative

future, to steer the nation toward a more favorable future, or to deal with the exigencies of the future that is actually realized.

In a future of *Nuclear Giants*, Russia and China will be our dominant protagonists. With respect to Russia, we identified three primary issues that should be addressed: the development of a new strategic relationship, the construction of a U.S. hedge posture, should the relationship between the United States and Russia sour, and the strengthening of cooperative threat reduction (CTR) activities. While there are substantial unknowns, for example how Russia will respond to an informal "arms regulation" regime, or the degree to which it would see a U.S. hedge strategy as a threat, we concluded that the U.S overall goal should be to normalize relations with Russia, with recognition that this will take a long time. As a component of this relationship, we should explore new mechanisms to promote assurance on both sides, some of which may not require formal treaties. The United States should proceed prudently to give substance to a hedge strategy, but should increase transparency with Russia to avoid misunderstanding. Cooperative threat reduction should be imbedded within the emerging strategic relationship and evolve to become a vehicle for mutual cooperation for security.

Two major issues arise with China: Taiwan security, which is both a short-term and medium-term issue, and the evolution of the United States-China political-military relationship, which is primarily a longer-term issue. Nevertheless, both must be viewed against a backdrop of Chinese economic expansion and growth in defense investment. Given our uncertainties about the direction of the U.S. strategic relationship with China, a prudent course of action would be to engage China in a strategic dialogue to deal constructively with trade issues, human rights, and to begin to discuss military/strategic issues, perhaps using arms control as a mechanism to initiate the discussion. The United States will need to clarify its own nuclear policy strategy vis-à-vis China, especially in view of PRC modernization and U.S. deployment of BMD. A key course of action is for the United States to continue serious diplomatic efforts to avoid conflict over Taiwan, without a fundamental change in U.S. "One China" policy.

If we were unfortunate enough to find ourselves in a future of *Nuclear Giants*, the United States would have to adopt a nuclear posture in keeping with the threat, with a nuclear arsenal and supporting infrastructure sufficiently robust to deter nuclear attack from any of the nuclear-armed adversaries. There would also need to be appropriate alliances, both to support U.S. interests and to extend deterrence to those who may be under threat in this kind of future.

With respect to a future dominated by *Global Terrorism*, two major issues that arise are whether or not terrorists can be deterred and how to deal with the sources of terrorism. While we know that traditional deterrence will not prevent terrorist attacks, retaliatory actions against nations, as exemplified by the present coalition with the anti-Taliban forces in Afghanistan, may deter some supporters of terrorism. We stress that better intelligence is critical. Enhanced understanding of their tactics can bolster defense against attacks thereby denying their objectives, but it is impossible to cover all

contingencies. We need to understand if there is a form of retaliation that would deter, depending on understanding those things that terrorists value, given that some have demonstrated lack of valuing their own lives. Denial of comfort or of reward to their families is an example. Additionally, since Sept. 11, the specter of nuclear weapons has been raised in six different contexts (See Fig. 3). Similar contexts will be present in the future and the United States must understand how it would respond to the use of WMD by terrorists and what its declaratory policy should be.

There is much we need to understand about the sources of terrorism—there are gaps in our knowledge of the motivations, tactics, resources, and bases of potential adversaries. There is a persistent lack of integration of information so that national resources are not being fully utilized and there still remain severe legal constraints. We should begin with strengthening the human intelligence resources of the intelligence community and maintaining intelligence partnerships with other states. This should be coupled with maintaining and developing alliances in regions of concern, especially to discourage further proliferation of WMD. Humanitarian aid can be enlisted to dissuade and demotivate terrorists and their supporters; programs should be developed to address root causes of conflicts, such as new approaches to facilitate indigenous economic and political development.

An important conclusion of the study is that requirements for deterrence (and for dissuasion, defense, destruction and assurance) will differ for each country and situation that is considered. What we learned during the cold war will not be applicable in wholly new situations. Each country requires detailed analysis and such analysis needs to be shaped to inform real world planning. This sort of assessment is not now being done in an organized, comprehensive way. We suggest a new entity to develop such assessments and help apply them to deterrence (and other relevant) planning.

In a future dominated by *Regional Nuclear Tension and Use* we have identified the key issues to be: deterrence of the use of WMD in regional conflicts, determining the role of the United States in such conflicts, and understanding the role of nuclear weapons. While we know that there are countries involved in regional conflict that have WMD capability and that WMD (chemical) has already been used, and that proliferation has occurred, we don't know what role the United States might choose to play in deterring conflict and whether use of WMD can be deterred. There are many gaps in the U.S. knowledge of potential adversaries and a lack of understanding of the roots of conflict and how to deal with them. Whether or not U.S. possession of more discriminate nuclear weapons would strengthen deterrence or increase the likelihood of use needs additional study.

The United States must be prepared to assure its allies such as Japan, South Korea, and Israel of its intention to support and assist them. It must be prepared to engage in diplomatic activities up front, before the onset of crises and especially during the early stages of a crisis. It must continue to dissuade countries such as Iran and North Korea from acquiring WMD, and it must dissuade countries such as India and Pakistan from using WMD. The United States must develop a clear view as to how to go about

deterring use of WMD in specific cases, especially during conflict escalation. In addition, the United States must be prepared to defend against the use of WMD, not only through BMD, but also by strengthening its passive defenses. Finally, the United States must be prepared to destroy any military capabilities that threaten its allies.

It would be desirable for the United States to adopt policies to steer it away from the potential futures described above and toward a less threatening future. However, even in a world of *Dynamic Cooperation*, elements of each of the preceding futures may be present, although to a lesser degree. This implies that some of the policy issues identified above may also be relevant, with appropriate modification. A case in point refers to nuclear weapon policy. The main concern that this scenario raises is that of maintaining the necessary infrastructure, resources, and operational capability to be able to respond effectively when the inevitable surprise occurs. It is always difficult to argue, during times of relative peace, for military hardware, forces, and bases and the tendency is to relax one's guard. This is a particular problem for nuclear weapons and their infrastructure. A particular issue is maintaining the expertise to deal with potential stockpile problems or to respond to new requirements, should the global situation take a turn for the worse.

For all the future scenarios and the courses of action that we have outlined above, the following missions for nuclear weapons in 2015 were identified in one form or the other:

- to deter attributable nuclear attack on CONUS,
- to deter attributable WMD use on the United States and its allies,
- to deter large-scale conventional attack,
- to respond to massive nuclear attack, and
- to destroy unique targets.

Given these potential needs, our policy conclusions with respect to nuclear weapons are:

> First of all, the Administration needs to issue a strong and clear statement outlining the importance of nuclear weapons to U.S. security. This must be accompanied by appropriate supporting actions that reinforce its stated position and which are tied explicitly to U.S. nonproliferation objectives.
>
> Secondly, the United States must maintain its nuclear capability base, both in the areas of design, production, and testing, but also in human resources and skills. This is particularly critical if we are to maintain a realistic hedge.
>
> Thirdly, the United States must fully examine the impact of strategic reductions with Russia on other relationships, for example, with our allies, with China, and with respect to regional deterrence.
>
> Lastly, the United States needs to come to grips with the question of the modernization of its nuclear warheads and delivery systems. Our study

uncovered serious concerns requiring additional review and study. The issue of modernization will be considered in more detail below.

Weapons and Operations

Our study concluded with an examination of the roles and requirements of weapons, operations, and infrastructure in being able to meet a future characterized by changing threats and surprise. Time and commitment will be required to maintain weapons system infrastructure, to create systems that are responsive to the threats, and to ensure operational readiness. Whatever is done must be robust and flexible—robust in response to an uncertain future and flexible in response to changing threats and policies.

We found that in 2015 deterrence will depend on nuclear and non-nuclear offensive capabilities and active and passive defenses. It is our view that precision conventional weapons by themselves cannot deter the use of WMD and that BMD at that time will not be sufficiently developed or capable to diminish the need for offensive forces. Therefore, nuclear weapons must be seen as credible and operationally ready for massive use and, in some circumstances, for limited application. Thus, our allies and our potential adversaries must see the infrastructures of both the Department of Defense (DoD) and the Department of Energy (DOE) as robust and capable of responding to new threats. However, our study uncovered serious issues relative to our weapons and delivery systems and their capabilities in 2015. Very little modernization of delivery platforms is planned over the next fifteen years. What we will have in 2015 will essentially be what we have today. This raises questions about the continued credibility of our nuclear deterrent, and could raise difficulties in providing a base of planning for the years after 2015.

Another issue involves the warheads that go along with these aging platforms. Unless there are some dramatic new developments in warhead modernization, the warheads on these systems in 2015 will be the same warheads we have today. Many of these warheads are already 20-25 years old, and they will only age further by 2015, unless the planned Life Extension Programs (LEPs) are successful. This is to be contrasted with the past when a new warhead system was deployed on the average every seven years.

The DoD is not looking at future nuclear weapon needs and its Nuclear Mission Management Plan (NMMP) doesn't address preservation of reconstitution assets. Although the NMMP identifies unique technologies that must be preserved, the funding is not assured. In addition, the DOE's Stockpile Stewardship Plan (SSP) identifies capabilities needed for a robust infrastructure, but it suffers from a number of planning and funding deficiencies, including continued decline of production plants, slipping life-extension programs, questionable ability to respond to new requirements, and inadequate DoD support.

Our study explored four elements we believe to be critical for ensuring robustness and flexibility for responding to future threats: (1) improved non-nuclear capabilities, (2) hedging for uncertainty, (3) new nuclear weapon capabilities, and (4) dual-capable

weapon systems. We found that non-nuclear capabilities are modernizing across a broad front with an important emphasis on the melding between technology, communication, and intelligence. In spite of the great strides being made, we were disturbed to find that these new systems had no nuclear survivability requirement. Given that nuclear threats still exist and will likely exist in the future, we find this to be a serious concern.

Hedging for uncertainty, especially with respect to nuclear forces, has been a persistent theme of our study. While attractive in principle, what is missing is a realistic plan that includes reasonable estimates of timelines and costs. It is critical that such a plan provide guidance for specific actions to improve DoD and DOE infrastructures, but also seek efficiencies, for example with a smaller, but revitalized, DOE production complex. Details for reconstituting existing capabilities need to be worked out and careful thought needs to be directed toward how to preserve existing assets, such as warheads and systems, in order to respond in the near term. For the longer term, the plan must address how to reestablish capability through new nuclear weapon systems, as old hardware can no longer be relied upon. A particular challenge is to retain competence through people, technology, and facilities. For a hedge plan to be credible it must include the training necessary to maintain nuclear mission operational readiness.

A difficult issue that needs more attention and study is the role that new nuclear weapon capabilities can play. This study examined how new nuclear weapon design options can reduce collateral damage and enhance deterrence. However, exploratory development is needed in order to assess potential options in specific scenarios of interest. Although there are on-going studies for hard and deeply buried targets (HDBT), few other potential needs are being given serious examination. In fact, some studies of new designs are actually prohibited by law[2]. The kind of studies that could be conducted include warheads that would completely destroy biological weapon agents, rather than simply dispersing them, weapon technology to reduce collateral damage and fallout, improvements in delivery accuracy that would permit reductions in yield, and warheads for BMD to provide high-confidence kill of incoming warheads. The existence of such studies would help dispel impressions that the United States would be self-deterred from a nuclear weapons response to WMD attacks. Such studies would contribute greatly to the maintenance of knowledge and expertise. However, current law prohibits the National Nuclear Security Administration (NNSA) from initiating new weapons development programs or new warhead refurbishment programs that have not been formally identified to and approved by the Congress.

Central to the issue of ensuring robustness and flexibility in order to respond to future threats is the issue of modernization of U.S. nuclear forces. This goes beyond the exploratory development mentioned above and speaks to the issue of the stockpile of the future and its associated delivery systems. A case can be made that because our nuclear

[2] The Conference Report (H. Rept. 107-258) on H.R. 2311, Energy and Water Development Act, 2002 states "The National Nuclear Security Administration (NNSA) may not use funds in fiscal year 2002 to initiate new weapons development programs that have not been formally identified to and approved by the Congress, other than through formal written reprogramming requests to the Armed Services and Appropriation Committees of Congress."

forces are aging and delivery systems are reaching end of life in the 2015 timeframe, modernization is required to maintain a credible deterrence posture and to sustain the infrastructure and knowledge base needed to support this posture. On the other hand, certain new designs would undoubtedly require nuclear testing, and without clear strategic military requirements the political barrier would be impossible to overcome. This study raises this issue as a topic needing substantially more study and discussion, especially the limitations that are imposed because of no nuclear testing.

Finally, dual-capable systems offer the possibility of low-cost, state-of-the-art nuclear capabilities. Such systems can reduce the development time and cost associated with nuclear systems, because their primary requirement would be non-nuclear. Training and operations could be made minimally different. The operating and maintenance burden for nuclear weapons would also be reduced. Nevertheless, significant challenges stand in the way of taking advantage of this possibility, not the least of which is overcoming the military's present phobia about nuclear weapons. Other challenges include reliability, safety and security, and weapons and system control.

Conclusion

Our study has concluded that the future is and will be highly uncertain. A key element in planning a deterrent posture for the future is to recognize this uncertainty and the potential for difficult and dangerous scenarios. We have found that the Cold War approach no longer obtains and that the security policy of the United States must be broadened to include elements of dissuasion, defense, destruction, and assurance. However, there is no "once size fits all" approach and the policy mix must be tailored to the individual situation. Nevertheless, all of the futures examined reveal a continued role for nuclear weapons. Modernization of nuclear weapons and their delivery systems is a key issue, but there was no consensus for a strategic requirement for modernization, although there were thoughtful arguments presented on both sides. Arguments were offered for new kinds of nuclear capabilities that might be needed to deter the range of threats in future world scenarios, but what could or could not be accomplished without nuclear testing remains uncertain. Our study raises concerns about U.S. policy with respect to modernization and proposes additional effort to better understand the benefits and/or downsides. In general, there was broad consensus on the need to maintain a viable infrastructure and the importance of maintaining the nuclear skill base through new programs.

We concluded the project with a roundtable discussion of the findings and conclusions presented above in which senior members of the international security community expressed their views on the issues covered. From this discussion, many of the points presented were validated, some were questioned, and a number of new issues were uncovered. These included questions about BMD and its potential effectiveness and relation to deterrence and arms buildup, doing a better job of taking into account the needs of other countries, especially our NATO allies, addressing how to work toward the future that would be most desirable, being clear about what the U.S. response should be to WMD use, whether pursuing new design weapons (particularly lower yield weapons)

would lower the nuclear threshold or encourage other states to do the same, and the role and potential transformation of arms control agreements. A key issue was what would be required to deter terrorists, especially without creating adverse effects in other areas, such as exacerbating regional conflicts. It was concluded that it is probably impossible to deter individual terrorists and that our best approach is a combination of actions: deterring states that sponsor terrorism, a robust defense against terrorist incidents, and finding ways to de-legitimize terrorists in their own communities. There was also discussion on a number of other points, for example: the need to take more seriously the likelihood of future conflict between Israel and Muslim states and the asymmetric nature of that conflict; and the advisability of the United States establishing and communicating policy "red lines," *i.e.*, what actions by others we would not be willing to tolerate and what our response might be. Some pitfalls to be avoided were discussed: the commitment trap, whereby in the interest of enhancing deterrence, we increase the likelihood of nuclear weapon use; the unintended chain reaction, whereby U.S. action, such as establishing BMD, encourages a series of military buildups by other states; and the potential for catalytic war, where actions by a third state are intended to cause war between two other states. Many of these new issues merit additional study—they will be presented and discussed in the complete report to follow.

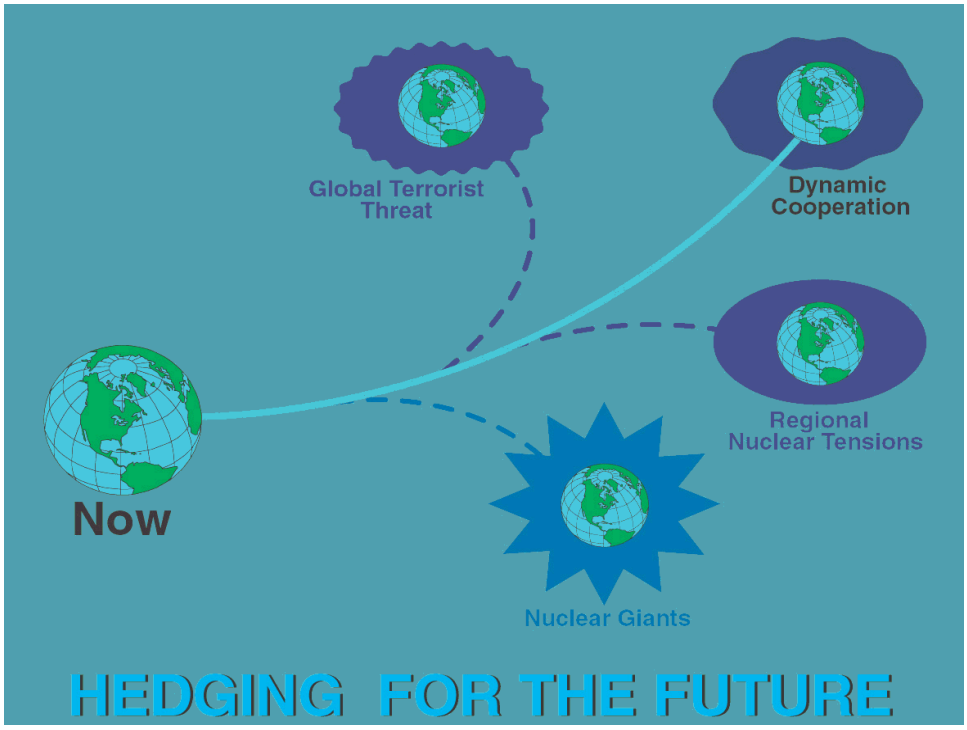

Figure 1. Different future scenarios considered in the "Whither Deterrence?" study.

Definitions

Deter - To frighten; to keep or discourage (a person) from doing something by instilling fear, anxiety, doubt, etc.

Dissuade - To turn a person aside (from a course, etc.) by persuasion or advice. To advise against (an action).

Assurance - Something said or done to inspire confidence, as a promise, positive statement, etc.; gu arantee.

Defense - The act or power of defending or guarding against attack, harm or danger.

Destroy - To tear down, demolish. To break up or spoil completely; ruin. To bring to total defeat; crush.

Figure 2. Dictionary definitions of the elements comprising D^4A.

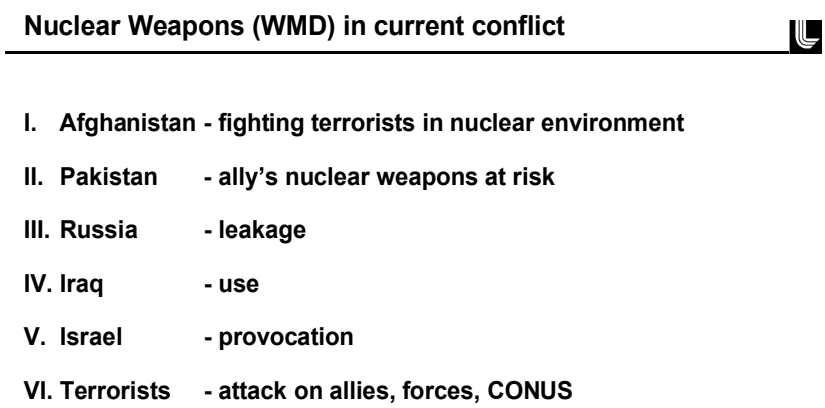

Figure 3. Six ways in which nuclear weapons (or other WMD) could have impacted the anti-Taliban conflict in Afganistan.